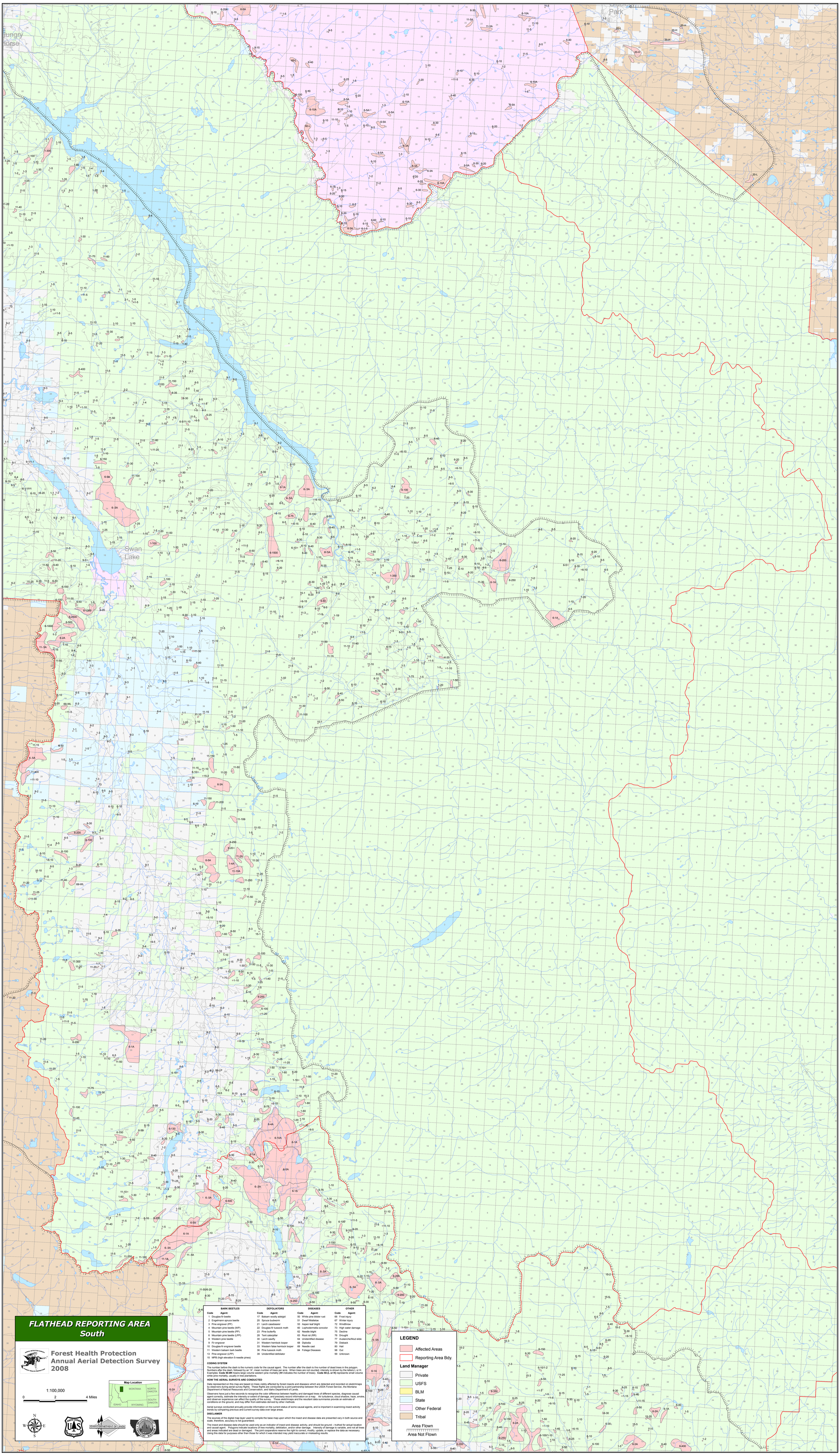

FLATHEAD REPORTING AREA
South

Forest Health Protection
Annual Aerial Detection Survey
2008

1:100,000

0 2 4 Miles

Map Location

MONTANA
NORTH DAKOTA
SOUTH DAKOTA
IDAHO
WYOMING

BARK BEETLES		DEFOLIATORS		DISEASES		OTHER	
Code	Agent:	Code	Agent:	Code	Agent:	Code	Agent:
1	Douglas-fir beetle	17	Balsam woolly adelgid	50	White pine blister rust	66	Frost injury
2	Engelmann spruce beetle	20	Spruce budworm	51	Dwarf Mistletoe	67	Winter injury
3	Pine engraver (PP)	21	Larch casebearer	53	Aspen leaf blight	72	Windthrow
4	Mountain pine beetle (WP)	22	Douglas-fir tussock moth	60	Lophodermella concolor	73	High water damage
5	Mountain pine beetle (PP)	23	Pine butterfly	62	Needle blight	75	Decline
6	Mountain pine beetle (LPP)	28	Tent caterpillar	63	Root rot (RR)	76	Drought
8	Western pine beetle	30	Larch sawfly	64	Unidentified disease	77	Avalanche/Mud slide
9	Fir engraver	31	Western hemlock looper	68	Diplodia	79	Dieback
10	Douglas-fir engraver beetle	33	Western false hemlock looper	69	Needle cast	80	Hail
11	Western balsam bark beetle	36	Pine tussock moth	84	Foliage Diseases	98	Out
13	Pine engraver (LPP)	39	Unidentified defoliator			99	Unknown
15	MPB (high elevation 5-needle pines)						

CODING SYSTEM

The number before the dash is the numeric code for the causal agent. The number after the dash is the number of dead trees in the polygon. Numbers after the dash, followed by an "A", mean number of trees per acre. When trees are not counted, intensity is shown by the letters L or H. Examples: **Code 50-##** means large volume western pine mortality (## indicates the number of trees). **Code 50-(L or H)** represents small volume white pine mortality, usually in tree plantations.

HOW THE AERIAL SURVEYS ARE CONDUCTED

Data represented on this map are based on trees visibly affected by forest insects and diseases which are detected and recorded on sketchmaps by observers during aerial survey flights. These flights are conducted by a joint partnership between the USDA Forest Service, the Montana Department of Natural Resources and Conservation, and Idaho Department of Lands.

Observers have just a few seconds to recognize the color difference between healthy and damaged trees of different species, diagnose causal agent correctly, estimate the intensity or extent of damage, and precisely record information on a map. Air turbulence, cloud shadow, haze, smoke, and observer experience can affect the quality of the survey. These sketchmaps and the resultant data summaries provide an estimate of conditions on the ground, and may differ from estimates derived by other methods

Aerial surveys conducted annually provide information on the current status of some causal agents, and is important in examining insect activity trends by comparing previous and current survey data over large areas.

DISCLAIMER

The sources of the digital map layer used to compile the base map upon which the insect and disease data are presented vary in both source and scale, therefore, accuracy is not guaranteed.

The insect and disease data should be used only as an indicator of insect and disease activity, and should be ground – truthed for actual location and causal agent. Polygons indicate locations of tree mortality, defoliation, and/or other damage. Intensity of damage is variable, and not all trees and areas indicated are dead or damaged. The joint cooperators reserve the right to correct, modify, update, or replace the data as necessary. Using this data for purposes other than those for which it was intended may yield inaccurate or misleading results.

LEGEND

- Affected Areas
- Reporting Area Bdy.

Land Manager

- Private
- USFS
- BLM
- State
- Other Federal
- Tribal

Area Flown
Area Not Flown